WHAT IS CLAIMED IS:

1. A device for tissue repair or replacement, comprising first and second components having different relative rates of *in vivo* degradation, the first component having a higher rate of *in vivo* degradation than the second component, and the first and second components being arranged relative to each other so that, after implantation of the device, the first component degrades *in vivo* leaving a scaffold formed of the second component, the scaffold having pores into which tissue can infiltrate.

2. The device of claim 1 wherein the first and second components comprise polymers.

3. The device of claim 1 wherein one of the first and second components comprises a ceramic.

4. The device of claim 3 wherein the other component comprises a polymer.

5. The device of claim 3 wherein the other component comprises a ceramic.

6. The device of claim 4 wherein the first component comprises polymer and the second component comprises ceramic.

7. The device of claim 4 wherein the first component comprises ceramic and the second component comprises polymer.

8. The device of claim 1 wherein the device is substantially non-porous prior to implantation into a patient.

9. The device of claim 1 wherein there is at least an 8 week difference between the degradation rates of the components.

10. The device of claim 9 wherein the degradation rates differ by about 12 months to 2 years.

11. The device of claim 1 wherein at least one of the components includes a therapeutic additive.

12. A device for tissue repair or replacement, comprising a blend of two immiscible polymers having different rates of *in vivo* degradation, the blend having a substantially co-continuous macroscopic phase-separated structure.

13. The device of claim 12 wherein the size scale for the phase-separated structure is from about 50 to 3500 microns.

14. The device of claim 13 wherein the size scale is from about 50-1000 microns.

15. The device of claim 12 wherein the polymers are selected from the group consisting of polyesters; polyphosphazenes; polyacetals; polyalkanoates; polyurethanes; poly(lactic acid) (PLA); poly(L-lactic acid) (PLLA); polycaprolactone (PCL); polyorthoesters; polycarbonates; polyglycolides; polyanhydrides; poly-DL-lactide-co-glycolide (PDLGA) and poly(lactic-glycolic)acid (PLGA).

16. The device of claim 12 wherein there is at least an 8 week difference between the degradation rates of the polymers.

17. The device of claim 16 wherein the degradation rates differ by about 12 months to 2 years.

18. The device of claim 12 wherein the device is substantially non-porous prior to implantation into a patient.

19. A device for tissue repair or replacement, comprising a blend of two immiscible polymers having different rates of *in vivo* degradation, the device being substantially non-porous prior to implantation in a patient.

20. The device of claim 2, 12 or 19 wherein the polymers are bioresorbable.

21. The device of claim 2, 12 or 19 wherein at least one of the polymers includes a therapeutic additive.

22. A tissue fixation device comprising a porous ceramic structure and a polymer disposed in pores of the ceramic structure, the device being substantially non-porous prior to implantation in a patient.

23. The device of claim 22 wherein the polymer has a higher rate of *in vivo* degradation than the ceramic structure.

24. The device of claim 22 wherein the polymer includes a therapeutic additive.

25. The device of claim 22 wherein the polymer is selected from the group consisting of Poly(α-hydroxy acids), polyhydroxyalkonates, polycarbonates, polyacetals, polyorthoesters, polyamino acids, polyphosphoesters, polyesteramides, polyfumerates, polyanhydrides, polycyanoacrylates, polyoxomers, polysaccharides, collagen, and polyurethanes.

26. The device of claim 25 wherein the polymer comprises a poly(hydroxy acid) selected from the group consisting of polylactides, polyglycolides, polycaprolacatones, and polydioxanones.

27. The device of claim 22 wherein the polymer comprises Polyglyconate B and the ceramic comprises tricalcium phosphate (TCP).

28. The device of claim 22 wherein the polymer comprises poly(lactic acid) and the ceramic comprises hydroxyapatite (HA).

29. The device of claim 22 wherein the polymer is formed by reacting *in situ* a reactive monomer or oligomer.

30. The device of claim 29 wherein the reactive monomer is selected from the group consisting of cyclic esters, cyclic carbonates, divinyl ethers-diols, and disocyanate-diamine.

31. The device of claim 22 wherein the ceramic structure has a pore size of about 20 to 2000 microns.

32. The device of claim 22 wherein the ceramic structure has a porosity of about 10 to 90%.

33. A device for tissue repair or replacement, comprising:

a porous ceramic structure comprising a first ceramic; and

a second ceramic disposed in pores of the ceramic structure, the device being substantially non-porous prior to implantation in a patient.

34. The device of claim 33 wherein the two ceramics have different relative rates of *in vivo* degradation.

35. The device of claim 33 wherein the ceramic structure has a pore size of about 20 to 2000 microns.

36. The device of claim 33 wherein the ceramic structure has a porosity of about 10 to 90%.

37. A method of tissue repair or replacement, comprising implanting in a patient a device including first and second components having different relative rates of *in vivo*

degradation, the first component having a higher rate of *in vivo* degradation than the second component, and the first and second components being arranged relative to each other so that, after implantation of the device, the first component degrades *in vivo* leaving a scaffold formed of the second component, the scaffold having pores into which tissue can infiltrate.

38. A method of making a device for tissue repair or replacement, comprising forming a porous scaffold of a first component, and infiltrating the porous scaffold with a second component.

39. The method of claim 38 wherein the scaffold is infiltrated with a sufficient amount of the second component to render the device substantially non-porous.

40. The method of claim 38 wherein the infiltrating step comprises providing the second component in the form of a liquid.

41. The method of claim 38 wherein one of the components comprises a polymer and the other comprises a ceramic.

42. The method of claim 38 wherein both components comprise polymers.

43. The method of claim 38 wherein both components comprise ceramics.

44. The method of claim 38 wherein the infiltrating step comprises injection molding.

45. A method of making a device for tissue repair or replacement, comprising providing a blend of two immiscible polymers having different rates of in vivo degradation, and performing a phase separation of the polymers to produce a two-phase solid structure.

46. The method of claim 45 further comprising selecting the polymers to provide a co-continuous macroscopic phase-separated structure.

47. The method of claim 45 wherein the performing step comprises subjecting the blend to melt induced phase expansion treatment.

48. A device for tissue repair or replacement, comprising first and second components having different relative rates of *in vivo* degradation, the first component having a higher rate of *in vivo* degradation than the second component, and the first and second components being arranged relative to each other so that, after implantation of the device, the first component degrades *in vivo*.